

## WE CLAIM:

- 1 1. A computer-implemented method for implementing a  
2 hierarchy of component object model interfaces, comprising:  
3 defining a hierarchy of component object model  
4 interfaces, wherein an interface at a lowest level of the  
5 hierarchy inherits from an interface at the highest level of  
6 the hierarchy;  
7 defining a first template class that is associated with  
8 the highest level of the hierarchy;  
9 defining a second template class that inherits from the  
10 first template class and is associated with the lowest level  
11 of the hierarchy; and  
12 instantiating the second template class with an  
13 interface as a template parameter.
- 1 2. The method of claim 1, wherein the second template  
2 class inherits directly from the first template class.
- 1 3. The method of claim 1, wherein the second template  
2 class inherits indirectly from the first template class.
- 1 4. The method of claim 1, further comprising defining a  
2 plurality of intermediate classes in a single inheritance  
3 arrangement, one of the intermediate classes inheriting from  
4 the first template class, and the second template class  
5 inheriting from another one of the intermediate classes.
- 1 5. The method of claim 4, wherein one or more of the  
2 intermediate classes are template classes.

1 6. The method of claim 1, further comprising defining an  
2 intermediate class, the intermediate class inheriting from  
3 the first template class, and the second template class  
4 inheriting from the intermediate class.

1 7. The method of claim 6, wherein the intermediate class  
2 is a template class.

1 8. The method of claim 1, wherein the interface provided  
2 as the template parameter is an interface at the lowest  
3 level of the hierarchy.

1 9. The method of claim 1, further comprising:  
2 extending the hierarchy of component object model  
3 interfaces to include a new interface defined at the lowest  
4 level of the hierarchy, wherein the new interface inherits  
5 from the interface at the highest level of the hierarchy;  
6 defining a third template class that inherits from the  
7 first template class and is associated with the new  
8 interface defined at the lowest level of the hierarchy; and  
9 instantiating the third template class with the new  
10 interface as a template parameter.

1 10. The method of claim 1, further comprising defining  
2 ActiveX Template Library interface maps in the first  
3 template class and in the second template class,  
4 respectively.

1 11. The method of claim 10, further comprising defining a  
2 plurality of intermediate classes in a single inheritance  
3 arrangement, one of the intermediate classes inheriting from  
4 the first template class, and the second template class  
5 inheriting from another one of the intermediate classes.

1 12. The method of claim 11, wherein one or more of the  
2 intermediate classes are template classes.

1 13. The method of claim 12, further comprising defining  
2 ActiveX Template Library interface maps in the respective  
3 intermediate template classes.

1 14. The method of claim 13, wherein the interface provided  
2 as the template parameter is an interface at the lowest  
3 level of the hierarchy.

1 15. The method of claim 14, further comprising:  
2 extending the hierarchy of component object model  
3 interfaces to include a new interface defined at the lowest  
4 level of the hierarchy, wherein the new interface inherits  
5 from the interface at the highest level of the hierarchy;  
6 defining a third template class that inherits from the  
7 first template class and is associated with the new  
8 interface defined at the lowest level of the hierarchy; and  
9 instantiating the third template class with the new  
10 interface as a template parameter.

1 16. A computer-implemented method for implementing a  
2 hierarchy of component object model interfaces, comprising:

3       defining a hierarchy of component object model  
4 interfaces, wherein an interface at a lowest level of the  
5 hierarchy inherits from an interface at the highest level of  
6 the hierarchy;  
7       defining a first template class that is associated with  
8 the highest level of the hierarchy;  
9       defining a second class that inherits from the first  
10 template class and is associated with the lowest level of  
11 the hierarchy; and  
12       providing an interface of the lowest level of the  
13 hierarchy as a template parameter to a template class  
14 directly inherited by the second class.